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Nonfamilial roles of women and fertility: Pakistan and the Philippines compared

Nasra M. Shah
and Peter C. Smith

East-West Center
Honolulu, Hawaii

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East-West Population Institute
East-West Center
1777 East-West Road
Honolulu, Hawaii 96848

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NASRA M. SHAH is a Research Fellow and PETER C. SMITH is a Research Associate at the East-West Population Institute.

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ABSTRACT *A comparison of the fertility behavior of working and nonworking women in Pakistan and the Philippines, based on data from the 1973 National Demographic Survey of the Philippines and the 1975 Pakistan Fertility Survey, shows very different patterns in the two countries. In Pakistan there was no significant difference between the fertility of working and nonworking women. In the Philippines, two types of working women had lower fertility: those who seemed to control their fertility consciously through contraceptive use and those whose fertility was lower owing to factors other than contraceptive use. The latter group was about four times larger than the former.*

Some of the reasons for the fertility difference between the two countries seem to be related to the distinct differences that exist between their occupational structures. About two-thirds of the Pakistani women worked at home, compared with about one-third of the Filipino women. More than twice as many of the urban Filipino women were engaged in professional occupations than urban Pakistani women (19 and 8 percent, respectively). The Filipino occupational structure seems more likely to generate mother-worker role conflicts, at least among women in professional occupations, almost all of whom in the present study worked outside the home and had lower fertility than nonworking women.

The relationship between nonfamilial roles of women and fertility has been the subject of a growing body of literature on the less developed countries (LDCs). Nonfamilial roles have often been defined according to sectors of the economy. Several writers have shown that a clear negative relationship between work participation and fertility is often lacking and where present is typical only of small subgroups of women (Jaffe and Azumi, 1960; Stycos, 1965; Stycos and Weller, 1967; Weller, 1968; Zarate, 1967; and Goldstein, 1972).

A few studies using aggregate data have shown a negative relationship for some Latin American and Southeast Asian countries (Heer and Turner, 1965; Maurer et al., 1973; Collver, 1968; Hass, 1972); others using individual data have also shown similar patterns (e.g., Harman, 1970; Vallin, 1978). That the association between female work and fertility in the LDCs is not always clear and inverse as it usually has

been in the more developed countries has led to the development of several hypotheses or frameworks attempting to explain this unexpected finding. (See Kupinsky, 1977, for a synthesis of recent studies on female work and fertility.)

Using Turkish data, Stycos and Weller (1967) concluded that if the nature of jobs was such that the jobs did not generate incompatibility between the roles of mother and worker there was minimal effect on fertility. The argument suggesting an inherent compatibility of the mother and worker roles for many jobs, particularly in the unorganized sector in the LDCs, has been used widely in subsequent writings (e.g., the studies in Kupinsky, 1977). Other arguments related to work commitment and alternative identity have been offered as possible explanations. Safilios-Rothschild (1977) argues that women's high work commitment depresses fertility more than does women's work when commitment is lacking. Furthermore, she states that women's work may not depress fertility as long as it does not provide an alternate identity to motherhood that is equally important to women. Third, she emphasizes the choice element in work participation. In many low-income families, she asserts, a woman's work is essential to the support of her family, and such work may not be accompanied by the motivation to control family size. In addition to these socio-psychological explanations, Fong (1976) has pointed out weaknesses in the measurement of variables involved in studying the relationship between female work and fertility as one possible reason for the ambiguity of results.

In Pakistan, only a few studies have explored the relationship between female work participation and fertility (Nasra Shah, 1975, 1977; Syed, 1978), although the general area of female labor force participation has been investigated more intensively (e.g., Farooq, 1975; Bean, 1968; Nasra Shah et al., 1977; Nasra Shah and Makhdoom Shah, 1980). Women's economic activities in the rural areas have been studied by some researchers (Khan and Bilquees, 1976; Saeed, 1966). Fertility of working women (number of children ever borne) was found to be similar to that of the nonworking women, when data from the 1973 Housing, Economic and Demographic Survey were used. The survey defined a working woman as one who was employed for pay or profit or was working as an unpaid family helper for 15 or more hours during the week prior to interview. Analysis from the 1968 National Impact Survey showed that working women were not significantly different from nonworking women in their desires for another child.

In the Philippines relatively more work has been done on the subject. Analyses of data from the 1968 National Demographic Survey (NDS) provide some evidence, although the results are mixed. Focusing on retrospectively estimated age-specific marital fertility, Pullum (1975) found that women who were not currently in the labor force had uniformly higher marital fertility than those "employed with pay." When Concepción et al. (1975) examined total marital fertility and recent fertility in the same sample, they observed no systematic differentials. Another analysis of regressions of the number of births on current labor force participation and other variables—including duration of marriage, husband's income, wife's education and place of residence—yielded negative coefficients for wife's labor force participation (Encarnación, 1973, 1978). In another regression study of the same data, Harman (1970) tested a model in which number of live births is influenced by wife's current labor force participation, and in which her labor force participation before marriage influences the open birth interval through its effect on age at marriage. Harman found a trade-off between labor force participation and childrearing, but only among younger women; at older ages, working women had more children than nonworking women. On the other hand, work before marriage was clearly associated with later marriage and, presumably, with lower subsequent childbearing.

Newer data have supported other analytic approaches. Rosenzweig's (1976) analysis of the 1973 NDS round focused on joint influences between labor force participation and fertility. The author found that fertility expectations diminished with work experience, but only slightly and only at the later ages.

Female labor force participation has also been examined in the context of a larger system of demographic and economic relationships, most notably by Rodgers et al. (1978), and earlier by Kintanar et al. (1974). The International Labour Organisation's BACHUE-II economic-demographic model reported by Rodgers et al. incorporates a dependency of marriage rates (and hence fertility) on labor force participation before marriage.

Two comments on this literature are appropriate here. First, all these studies, save perhaps that by Rosenzweig, suffer from an inability to sort out the direction of causality between labor force participation and fertility. Second, working women are generally treated as a homogeneous group with respect to fertility consequences. Most studies

including the present one suffer from the first deficiency, but we make some headway respecting the latter. Our analysis of the relationship between female work participation and fertility in Pakistan and the Philippines is based on the latest data available to us for the two countries.

RATIONALE FOR COMPARING PAKISTAN AND THE PHILIPPINES

For several reasons, Pakistan and the Philippines invite comparison. Both are countries with high levels of fertility. The crude birth rate of Pakistan seems to have been around 42–44 per thousand for some time (Afzal, 1974). The Philippine crude birth rate, now about 34 per thousand, was nearly 43 per thousand around 1970 and even higher before that. (For the 1970 estimate see Concepción and Smith, 1977: 25. The recent estimate is that of the Population Institute, University of the Philippines, and is supported by reports of the 1978 Republic of the Philippines Fertility Survey.)

Moreover, children seem to be highly valued in both societies. Both countries are known to have strong, though very different, religious orientations. Levels of contraceptive use among currently married women are not high, although at the time of the surveys used for our study the percentage of current use was three times as high in the Philippines as in Pakistan (17 percent and 5 percent, respectively).

In contrast to some of these similarities, the Philippines is strikingly more developed in some of the developmental and intermediate variables that affect fertility—e.g., female literacy, educational attainment, urbanization, and age at marriage. In congruence with the high educational levels, the female occupational structure in the Philippines is considerably more diverse than that in Pakistan. Furthermore, a substantial proportion of Filipino working women is engaged in occupations requiring employment outside the home. About 20 percent of all working women in the Philippines were in professional occupations, compared with only 3 percent in Pakistan.

From its pattern of female occupations, Pakistan can be regarded as typical of countries with low occupational differentiation. Most female economic activity in Pakistan takes place within the home and in the unorganized sector. The majority of jobs are therefore not likely to generate mother-worker role conflict. Furthermore, most of the jobs provide low prestige and are unlikely to foster an alternate

identity. It is only in the small subgroup of highly educated and affluent women in prestigious occupations that some of the theoretical frameworks mentioned above are likely to apply.

The Philippines, on the other hand, is more advanced in the process of female occupational differentiation, and the subgroups to whom such arguments can apply are fairly sizeable. For example, 41 percent of currently married urban Filipino female workers were engaged in professional, clerical, and administrative occupations. Not all of such jobs are likely to be highly ranked in the hierarchy of jobs, but over 90 percent of them are situated outside the home and involve an employer.

Considering these differences between the two societies, and the existing theoretical frameworks, we begin with the following expectations. In Pakistan, a negative relationship between work participation and fertility will be present only for women of relatively high socioeconomic status and in prestigious occupations, if at all. In the Philippines, the negative relationship will be stronger and more widespread, and will be most significant for women of high socioeconomic status (SES) in prestigious occupations.

DATA

We have used data from the 1975 Pakistan Fertility Survey (PFS) and the 1973 National Demographic Survey (NDS) of the Philippines. The PFS was part of the World Fertility Survey (WFS) and included basically the core questionnaire for the WFS, which provided information on maternity and marital histories, contraceptive knowledge and use, exposure to mass media for ever married women up to age 49, and the education levels and occupations of both spouses. (For details of sampling and initial results see Population Planning Council, 1976.) Altogether, 4,663 currently married women were interviewed. The present analysis is based on relevant subgroups of these women as described below. The 1973 NDS encompassed 8,434 households throughout the Philippines and involved interviews with 9,412 ever married women between the ages of 15 and 50. Pregnancy histories and partial marital histories were collected, as well as socioeconomic information including standard labor force information and answers to a block of in-depth workforce questions. Results of the survey appear in various reports of the Population Institute, University of the Philippines.

We have based our definitions of female extrafamilial work in

Pakistan and the Philippines on the following questions asked in the PFS and the NDS, respectively.

> Q. (PFS) "As you know many women work. . . , I mean aside from doing their own housework. Some take up jobs for which they are paid in cash or kind. Others sell things or have a small business. Are you doing any such work at the present time?" If the answer was yes, information on the type of occupation, nature of employment (self versus other), place of work, and nature of income (cash or kind) was collected.
>
> Q. (NDS) "If you consider your total time and activities, what do you spend most of your time on?" (question C1) If response was "working," question C2 followed: "What is the exact nature of this activity you are engaged in?"

The concepts underlying these questions are similar though not identical. In both surveys informal as well as formal activity for either cash or noncash payment was recorded, and in neither was a reference time period used. But in the Philippine survey an occupation was recorded only when "most" of a respondent's time was devoted to it. The extent and range of economic participation is therefore understated somewhat in the Philippine data, as is the difference in participation patterns between Pakistan and the Philippines.

Work participation and fertility measures

We have used three approaches to specifying different dimensions of work. We distinguish (1) working women versus nonworking women; (2) among working women, women who were working at home versus those who were working outside; and (3) women in different occupational categories. Working women were grouped into four occupational categories for Pakistan and five occupational categories for the Philippines. Pakistani and Filipino working women were divided into professionals, farmers, tailors/weavers, and a fourth category of workers in other occupations. In addition, women in sales occupations were treated as a separate category in the Philippines because of the rather large number of sales workers in that country. To establish a time frame of work participation, we have used work (or nonwork) since marriage as the independent variable in the analyses of recent fertility (defined as fertility during the five years prior to survey) and number

of children ever born to a respondent (CEB). Current work participation was used as the independent variable in the analysis of desire for another child.

Three fertility measures were used as dependent variables: number of births in the five years prior to survey, number of children ever born, and desire for an additional child. Our objective in using these measures has been to study the effect of work participation on completed family size, recent fertility, and desired fertility. All these measures are demographically important. Recent fertility is of interest because the family planning programs in Pakistan and the Philippines began only a few years ago, in 1965 and 1970, respectively. The emphasis on conscious fertility control and the widespread availability of contraceptives are relatively recent phenomena. Therefore, even though the average number of children ever born may not have been significantly affected by the programs, recent fertility among working women might have been influenced because of the greater availability of contraceptive services affecting birth spacing.

It has often been assumed that desire for additional children is related to behavior designed to promote or prevent future births. Nasra Shah and Palmore (1979) have shown that in Pakistan contraceptive use was significantly higher among women who did not want another child than among women who did. Given this behavioral implication of desire for additional children, it is important to study how work participation affects the desire for an additional child. Such a study would provide estimates of the potential demand for fertility control among working and nonworking women.

The method of analysis

We examine the relationship between work participation and fertility behavior with multiple classification analysis (MCA), a form of dummy variable regression that is well suited for analysis of data with categorical variables. We have attempted to use occupational classifications that ensure comparability between the two countries. In addition to the work participation variables described above, relevant background variables have been used as covariates or factors in the MCA analysis, as described in Table 1. Besides the age specification (10–44) used in selecting women for analysis, our criteria for the sample to be analyzed included women who were not pregnant at the time of survey and who believed themselves to be fecund. Subfecund and pregnant women

TABLE 1 Model specifications and variable descriptions for the three fertility variables: Pakistan and the Philippines

Regression on	Covariates	Factors
Births during previous 5 years (number)	Age of wife (10–44) Age of wife squared Duration of breastfeeding[a] (in months)	Wife's education (none, <5 years, 5+ years) Husband's education (none, <5 years, 5+ years) Contraceptive use over last two birth intervals (Yes/No) 3 work status variables[b]
Number of children ever born (CEB)	Age of wife (35+) Duration of breastfeeding[a] Duration of marriage (in years) Duration of marriage squared	Same as above
Desire for another child (dichotomous Yes/No variable)	Age of wife (10–44) Age of wife squared Number of living children Number of living children squared Wife's age at first marriage	Same as above except contraceptive use defined as current use

a Duration of breastfeeding during the last closed interval was considered to be a proxy for general breastfeeding behavior. The analysis was restricted to women who had had at least two live births because only they could have had this duration of breastfeeding.

b The three variables were working/not working, workplace (home/outside), and type of occupation.

were excluded from the analysis in order to focus more closely on women who had been exposed to childbearing during the recent past and whose desires about wanting another child were likely to be realistic.

Control variables and expected relationships

We chose certain background variables because of their expected direct and indirect effects in the multivariate analysis. Age of wife was expected to have an effect on actual as well as desired fertility. Actual fertility is known to be positively related to age, although age has a

relatively smaller (or declining) effect on fertility beyond a certain point. The age of a woman is also related curvilinearly to her propensity to enter the labor force (as shown in Table 2), and it was therefore necessary to control for this effect of age before analyzing the relationship between work participation and fertility.

Lactation is known to have a direct effect on birth intervals (and by implication on recent as well as completed fertility) through lengthening the period of postpartum amenorrhea (Potter, 1965; Iqbal Shah, 1980); for that reason we considered it an important control variable in this study. Duration of breastfeeding varies by such socioeconomic factors as women's education, being longer among illiterate and less educated women in several WFS countries (Williams, 1979). It is likely to be negatively affected by employment outside the home, especially among women whose jobs prevent them from being accompanied by their children. Thus, work participation may exert an indirect negative effect on fertility by shortening the length of breastfeeding.

The effect of female education on fertility can be routed through several channels. First, more educated women may enter the labor force if jobs are readily available to them. High prestige occupations (such as in medicine and teaching) are usually associated with high education. They are likely to be situated outside the home and probably impose greater constraints on fertility (by being incompatible with the mother role) than other jobs that are relatively low in prestige and located at home. Second, the process of education may lower family-size norms and educated women may want fewer children. Third, educated women may have greater access to the contraceptive methods of fertility control than other women—both for monetary reasons and because of greater knowledge of such means. Another factor that needs to be considered because of its possible effect on both education and fertility is the respondent's family of orientation.

Contraceptive use is expected to exert a direct inverse effect on fertility through the limitation and the spacing of births. In some cases the effect may be facilitated by female work participation, especially outside the home because outside activity may provide more chance for a woman to gain knowledge about contraception.

Duration of marriage is a significant variable in societies where most childbearing takes place within marital unions. Among women who have been married only once and are currently married, marriage

TABLE 2 Age-specific labor force participation rates of currently married women, for total, urban, and rural areas: Pakistan (1975) and the Philippines (1973)

Woman's age	Pakistan[a]						Philippines[b]							
	Urban and rural		Urban		Rural		Metro, Urban, and rural		Metro		Urban		Rural	
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
<20	15	(118)	13	(36)	15	(78)	14	(34)	0	(0)	5	(2)	17	(32)
20–29	35	(289)	35	(97)	36	(186)	22	(453)	21	(41)	23	(96)	21	(316)
30–39	28	(230)	30	(83)	28	(145)	32	(781)	39	(83)	35	(195)	30	(503)
40–49	22	(178)	22	(61)	22	(114)	30	(552)	27	(39)	38	(146)	28	(367)
All ages	18	(814)	16	(277)	18	(523)	27	(1,820)	29	(163)	31	(439)	26	(1,218)

a Weighted number for the total country; unweighted for rural and urban.

b In this and subsequent tables the sample frequencies shown are approximate sample frequencies obtained from weighted results and the overall sampling fraction.

SOURCES: 1975 Pakistan Fertility Survey and 1973 Philippine National Demographic Survey.

duration is expected to have an effect on fertility similar to that of a woman's age. The correlation between age of wife and duration of marriage is particularly high in cases where the age at marriage falls within a narrow range.

Finally, the rural or urban background of women is related to the type of economic activity women are likely to engage in. In addition, institutional and normative structures that influence fertility are likely to be quite different in rural and urban settings. We have therefore examined women residing in rural and urban areas separately.

RESULTS

The analysis is divided into two broad sections consisting of a general description of the labor force participation levels and occupational structures in the two countries and a multivariate analysis of the relationship between female work participation and fertility. More than one-fourth (27 percent) of the Filipino women were reportedly engaged in some economic activity in 1973 according to the NDS, compared with 18 percent of all Pakistani women in 1975 (Table 2). Younger women (<20) reported lower participation rates in both countries, whereas the age of peak activity varied from 20–29 in Pakistan to 30–39 in the Philippines. After age 40 activity rates declined in both countries but considerably more in Pakistan than in the Philippines.

Differences in occupational structure

Rural occupations for women are severely limited in Pakistan; roughly the same proportion of Pakistani and Filipino respondents were engaged in agricultural work (37 percent and 39 percent respectively), but the occupational concentration of women within the nonagricultural occupations was much greater in Pakistan than in the Philippines (Table 3). The crafts occupations alone absorbed 52 percent of the rural women in Pakistan, whereas rural nonagricultural women in the Philippines were found in a range of occupations, notably in commerce and domestic service which are restricted occupations for Pakistani women. Both commerce and domestic service were occupations dominated numerically by women in the rural Philippines.

The contrast between countries was sharper still in the urban sector, where Filipino women were much more widely distributed in commerce, the professions, and the services. Pakistani women worked

TABLE 3 Occupational distribution of wives who had worked since Philippines (1973)

	Pakistan				
	Urban			Rural	
	Percentage distribution		Sex ratio	Percentage distribution	
Occupation	Males	Females	(M/FX100)	Males	Females
All occupations	100	100	510	100	100
(Number)	(1,804)	(354)		(3,006)	(593)
Professional, technical, and administrative	9	8	528	3	2
Professors, teachers	3	6	204	1	*
All others	6	2	1,767	2	1
Clerical, sales	32	2	8,157	9	2
Working proprietors, traders	11	1	4,875	4	*
Sales personnel	5	*	4,800	1	*
All others	16	*	28,000	4	*
Transportation and communication	5	0	0	4	0
Crafts and general labor	36	68	273	20	52
Tailors, desssmakers, etc.	2	40	31	*	26
All others	34	28	615	20	26
Service and sport	10	20	267	7	7
Housekeepers, cooks, maids, etc.	*	12	21	*	6
All others	10	8	659	7	1
Agriculture and mining	8	2	2,014	57	37

NOTE: A zero means there were no cases in the specified category.

* Less than 1 percent.

SOURCES: 1975 Pakistan Fertility Survey; 1973 Philippine National Demographic Survey.

disproportionately in the craft occupations and domestic service. The sex ratios within urban occupational groups are a useful index of female employment patterns vis-à-vis male. In urban Pakistan most occupational groups with the exception of tailors and domestic servants were dominated numerically by males, some of them overwhelmingly so, whereas the reverse was true of many Philippine occupational groups (Table 3).

marriage and their husbands, by region: Pakistan (1975) and the

	Philippines					
	Urban			Rural		
Sex ratio (M/FX100)	Percentage distribution		Sex ratio	Percentage distribution		Sex ratio
	Males	Females	(M/FX100)	Males	Females	(M/FX100)
507	**100**	**100**	**167**	**100**	**100**	**310**
736	**13**	**19**	**111**	**2**	**8**	**81**
1,200	2	12	24	*	7	32
562	11	7	271	2	1	340
2,740	**22**	**37**	**100**	**5**	**23**	**63**
2,420	6	11	89	2	9	61
1,200	7	15	112	2	12	48
5,850	9	12	135	1	2	152
0	**18**	**1**	**2,896**	**8**	*	**4,500**
199	**25**	**10**	**400**	**9**	**19**	**148**
18	2	5	59	*	8	12
378	23	5	767	9	11	240
498	**9**	**30**	**49**	**2**	**10**	**79**
14	4	27	22	*	9	15
3,317	5	3	284	2	1	459
780	**13**	**2**	**1,000**	**74**	**39**	**582**

Tables 4 and 5 provide additional data on differences in the occupational structures of Pakistani and Filipino women. More than four-fifths of all currently married working women in the Pakistani sample were engaged in one of two occupations, crafts (53 percent) or farming (26 percent). Within the urban areas a majority (65 percent) were in crafts, whereas 19 percent were domestics and only 9 percent were working as teachers, nurses, or other professionals (Table 4). In

TABLE 4 Percentage distribution of current occupations by place of work and working status, urban and rural currently married women: Pakistan (1975)

Residence, place of work, working status	Professionals (nurses, teachers, others)	Clerical, administrative, sales	Farm workers	Service (housekeepers, domestics)	Spinners, weavers	Tailors	Other crafts	Unskilled workers and laborers	All occupations
URBAN									
Work at home									
Employee	0	0	0	0	28	7	3	29	9
Self-employed	13	80	17	2	68	91	60	14	58
Work outside home									
Employee	79	20	83	94	4	2	34	43	30
Self-employed	8	0	0	4	0	0	3	14	2
Total urban	100	100	100	100	100	100	100	100	100
(Number)	(24)	(7)	(6)	(53)	(50)	(102)	(25)	(7)	(274)
RURAL									
Work at home									
Employee	0	0	0	3	8	11	5	0	5
Self-employed	0	40	*	0	91	82	73	16	42
Work outside home									
Employee	67	0	75	83	0	2	2	36	37
Self-employed	33	60	25	13	1	5	20	48	16
Total rural	100	100	100	100	100	100	100	100	100
(Number)	(6)	(10)	(203)	(30)	(79)	(131)	(37)	(25)	(521)

NOTE: A zero means there were no cases in the specified category.

* Less than 1 percent.

SOURCE: 1975 Pakistan Fertility Survey.

TABLE 5 Percentage distribution of current occupations by place of work and working status, urban and rural currently married women: Philippines (1973)

Residence, place of work, working status	Professionals (nurses, teachers, others)	Clerical, administrative	Traders	Sales clerks	Farmers	Service (housekeepers, domestics)	Seamstresses, tailors	Basket weavers	Other crafts	All occupations
URBAN										
Work at home										
Employee	1	4	2	12	0	12	9	0	10	5
Self-employed	6	2	46	16	25	12	56	100	13	20
Work outside home										
Employee	90	93	5	25	12	63	33	0	61	55
Self-employed	3	1	47	47	63	13	2	0	16	20
Total urban	100	100	100	100	100	100	100	100	100	100
(Number)	(158)	(83)	(107)	(92)	(8)	(59)	(43)	(2)	(31)	(583)
RURAL										
Work at home										
Employee	0	0	7	3	9	15	18	8	32	10
Self-employed	0	0	58	10	4	31	69	88	46	24
Work outside home										
Employee	97	100	3	8	57	41	10	1	18	40
Self-employed	3	0	32	79	30	13	3	3	4	26
Total rural	100	100	100	100	100	100	100	100	100	100
(Number)	(99)	(6)	(104)	(109)	(560)	(39)	(113)	(66)	(72)	(1,168)

NOTE: A zero means there were no cases in the specified category.

SOURCE: 1973 Philippine National Demographic Survey.

contrast to this degree of concentration, Filipino women were fairly equally divided among four or five occupations. Nearly 20 percent of the women were in professional or clerical occupations, 23 percent were working as sales persons, and only 18 percent of the women were in crafts. Contrasts between the two countries' urban occupational structures are particularly noteworthy. Forty-one percent of the urban Filipino women were professional or clerical workers, compared with only about 11 percent of urban Pakistani women. Similarly, 34 percent of the urban Filipino women were in sales occupations, but this category was almost nonexistent in urban Pakistan.

These differentials in the occupational structures of the two countries are indicative of some of their basic cultural differences. Most of the jobs for women in Pakistan maximize work within the home and minimize contact with an employer (Tables 4 and 5). About two-thirds (67 percent) of all urban jobs were located in the home and 60 percent did not involve an employer. In the rural areas relatively more of the work took place outside the home mainly because women were engaged in farm work. In contrast to these patterns, 60 percent of urban Filipino women were employed by someone else and 75 percent of them worked outside the home; the patterns were less marked but similar for rural Filipino women. Such differences in the place and nature of work probably indicate that the types of jobs that are permissible or available to women in the two societies are notably different. Filipino society is less restrictive in allowing women to leave their homes for work and does not seem to discourage contact with employers, who in many cases are male. Norms relating to the sheltering of women are stronger in Pakistan, as reflected in the prevailing occupations, places of work, and employment statuses of women.

These contrasts between the two countries in place of work and employment status are also present for specific occupations. For example, considerably larger proportions of urban women employed as tailors were working outside the home in the Philippines than in Pakistan (35 and 2 percent respectively). This finding implies that the activity was organized in formal establishments to a greater degree in the Philippines. For certain other occupations, the place of work and employment status were similar in the two countries; for example, most spinners and weavers were working at home.

Characteristics of working and nonworking women

We compared working and nonworking women on several socioeconomic and demographic characteristics in the two countries (Tables 6 and 7). The differences between working and nonworking Pakistani women were found to be fairly small for most characteristics. A slightly larger proportion of the nonworking women and their husbands were literate; somewhat larger proportions of them knew about and had used family planning methods; and fewer of them wanted additional children. Thus, nonworking women were more "modern" than working women in their outlook as judged by these characteristics. A similar pattern of findings emerged for women within rural and urban areas.

The differences between working and nonworking women were greater among Filipinos, particularly in urban areas. Working women in metropolitan and other urban areas had married up to one and a half years later than their nonworking counterparts; significantly larger proportions of them than of nonworking women were using contraceptive methods. As expected from their contraceptive behavior, urban working women had somewhat lower fertility in the five years prior to the survey. Similarly, larger proportions of working than of nonworking women in rural areas were using contraception (15 versus 11 percent). Working women in metropolitan and other urban areas had attained higher levels of education compared with nonworking women. For example, the mean grades attained by working metropolitan women were 10.8 compared with 8.7 for nonworking women. Among the rural women, on the other hand, there was only a negligible difference in grade attainment between working and nonworking women. A similar pattern of higher educational levels among working women in metropolitan and other urban areas was found when husband's education was examined. These findings imply that, on the average, working women in urban areas belonged to a relatively high socioeconomic level whereas in rural areas women in the labor force tended to have relatively low socioeconomic status.

This background about working and nonworking women in the two countries indicates some noticeable differences in the characteristics of working and nonworking women. Pakistan represents a situation where the working women belong to relatively less educated households, particularly in the urban areas. On the contrary, the working Filipino women in urban areas belong to relatively more educated

TABLE 6 Socioeconomic and demographic characteristics of working and nonworking currently married women, ages 15–44, by specified characteristics: Pakistan (1975)

Characteristic	Worked since marriage[a]			Never worked since marriage			All currently married women
	Urban	Rural	All working women	Urban	Rural	All nonworking women	
$\bar{X}$ age	28.9	28.0	28.2	29.0	29.0	29.0	28.9
$\bar{X}$ age at marriage	16.6	16.0	16.2	16.8	16.5	16.5	16.4
% wives literate[b]	24.8	5.0	9.9	28.3	5.8	11.7	11.3
Wife's education ($\bar{X}$ number of grades passed)	1.5	0.2	0.6	1.9	0.4	0.7	0.7
% husbands literate[b]	54.8	35.8	40.5	63.7	36.2	43.4	42.8
Husband's education ($\bar{X}$ number of grades passed)	4.2	2.2	2.7	5.4	2.3	3.1	3.0
$\bar{X}$ number of children ever born	4.2	3.7	3.8	4.1	3.9	4.0	4.0
$\bar{X}$ number of living children	3.3	2.9	3.0	3.3	3.0	3.1	3.1
$\bar{X}$ number of children born during past 5 years	1.2	1.1	1.1	1.2	1.2	1.2	1.2
$\bar{X}$ number of children desired (ideal)	3.9	4.5	4.3	3.9	4.2	4.1	4.2
% knowing of a family planning clinic	50.3	22.6	29.4	56.0	26.9	34.5	33.6
% knowing family planning personnel	34.7	23.4	26.2	40.3	25.8	29.6	28.9
% knowing of family planning method	84.0	70.7	74.0	82.8	73.9	76.3	75.8
% who ever used contraception	19.1	5.7	9.1	23.1	6.2	10.6	10.3
% currently using contraception	9.2	2.8	4.4	13.0	2.6	5.3	5.1
% wanting more children	50.4	64.7	61.1	49.9	57.2	55.3	56.4
$\bar{X}$ number of additional children wanted	1.1	1.6	1.4	1.0	1.3	1.3	1.3
Number in sample	200	605	805	887	2,509	3,396	4,201

a Of all the women who had worked since marriage, 90 percent were currently working.

b Had any schooling.

SOURCE: 1975 Pakistan Fertility Survey.

TABLE 7 Socioeconomic and demographic characteristics of working and nonworking currently married women, ages 15–44, by specified characteristics: Philippines (1973)

Characteristic	Worked since marriage[a]				Never worked since marriage				All currently married women
	Metro	Other urban	Rural	All working women	Metro	Other urban	Rural	All non-working women	
$\bar{X}$ age	32.9	33.0	32.5	32.7	30.5	31.1	30.8	30.9	31.5
$\bar{X}$ age at marriage	22.3	21.5	19.5	20.2	21.0	20.1	19.2	19.5	19.8
% wives literate[b]	99.7	98.5	87.0	90.9	99.1	96.8	93.7	94.8	93.4
Wife's education ($\bar{X}$ number of grades passed)	10.8	10.0	5.3	6.9	8.7	7.8	5.4	6.2	6.4
% husbands literate[b]	100.0	97.0	85.7	89.7	99.6	98.0	92.5	94.2	92.5
Husband's education ($\bar{X}$ no. of grades passed)	11.0	10.1	5.2	6.9	10.1	8.7	5.6	6.6	6.7
$\bar{X}$ number of children ever born	3.5	3.8	4.7	4.4	3.5	4.0	4.4	4.3	4.3
$\bar{X}$ number of living children	3.2	3.5	4.1	3.9	3.3	3.8	4.0	3.9	3.9
$\bar{X}$ number of children born during past 5 years	1.0	1.2	1.4	1.3	1.3	1.4	1.5	1.4	1.4
$\bar{X}$ number of children desired (ideal)	3.9	4.2	5.0	4.7	3.8	4.5	4.8	4.7	4.7
% knowing of a family planning clinic	68.5	70.4	50.9	59.4	68.2	72.2	52.2	57.4	58.1
% knowing family planning personnel	12.0	34.1	23.8	25.2	18.0	30.6	24.0	24.8	24.1
% knowing of family planning method	97.1	96.6	81.2	86.4	94.8	91.8	85.0	87.1	86.8
% who ever used contraception	51.8	49.1	24.0	32.6	42.3	39.0	19.5	25.1	27.9
% currently using contraception	34.0	32.6	15.4	21.0	26.8	23.9	11.4	15.0	17.2
% wanting more children	32.6	30.5	32.2	31.8	29.4	32.4	30.7	31.0	31.3
$\bar{X}$ number of additional children wanted	0.7	0.7	0.9	0.9	0.8	0.9	0.8	0.8	0.9
Number in sample	197	496	1,381	2,074	284	682	2,539	3,505	5,579

a Of all the women who had worked since marriage, 72 percent were currently working.

b Had any schooling.

SOURCE: 1973 Philippine National Demographic Survey.

households. Thus, besides the differences in occupational structure pointed out above, there seem to be some differences in the basic socioeconomic background of working and nonworking women in the two countries. Whether these differences in the nature of work roles affect fertility behavior in the two countries after several background variables are controlled is investigated next.

NATURE OF FEMALE WORK AND FERTILITY

We studied the overall relationship between the three work variables (whether working, work place, occupation) and fertility by conducting a hierarchical analysis of variance (Table 8). In the case of Pakistan, none of the work variables had a significant effect on fertility after the several covariates and factors listed in Table 1 were controlled. The results were nonsignificant for each of the three fertility measures (number of births during previous five years, number of children ever born, desire for another child) and for both rural and urban areas. In contrast to Pakistan, the Filipino sample showed several statistically significant results for each of the three fertility measures. For example, each of the three work variables had a significant effect on the number of births Filipino women had in urban areas during the five years prior to the survey. Place of work and work status also had significant effects on the number of births in the previous five years in rural areas. The MCA results showing the effects of specific independent variables on the three fertility measures are presented in Tables 9–14.

Births during the five years prior to the survey

Pakistani women who were economically active had somewhat fewer births in the five years prior to the survey than nonworking women, although the differences were statistically insignificant (Table 9). For example, rural women who were working outside the home had about 7 percent fewer births than the nonworking rural women.[1] In the

1 For Pakistan an examination of the interaction effects between the independent variables showed a significant interaction between husband's education and wife's place of work, in relation to desire for another child. To test whether this interaction was significant for recent fertility, an interaction term was created and entered into the MCA on children born during the five years prior to the survey. The R^2 remained virtually unchanged in urban areas and increased by 0.5 percent in rural areas when the interaction term was included. The overall effect of the interaction term was not significant for urban or rural areas.

TABLE 8 Hierarchical analysis of variance for births during 5 years prior to survey, by three work variables: Pakistan and the Philippines

Work variable[a]	Sum of squares	DF	Mean square	F	Significance of F[b]
PAKISTAN					
Whether working					
Urban	0.593	1	0.593	0.593	NS
Rural	1.645	1	1.645	2.056	NS
Work place					
Urban	0.593	2	0.297	0.295	NS
Rural	2.127	2	1.063	0.335	NS
Occupation					
Urban	3.696	4	0.924	0.914	NS
Rural	5.740	4	1.435	1.801	NS
PHILIPPINES					
Whether working					
Urban	11.590	1	11.590	15.505	<.001
Rural	0.041	1	0.041	0.058	NS
Work place					
Urban	11.813	2	5.906	7.855	<.001
Rural	8.422	2	4.211	5.980	<.01
Occupation					
Urban	13.618	5	2.724	3.620	<.01
Rural	3.184	5	0.637	0.896	NS

NOTE: The analysis of variance results shown in this table was obtained by using the hierarchical option, and the work variables were entered into the model after the three covariants and all the independent variables in each run. This means that the effects of all preceding variables were taken into account before the analysis was performed on the work variables in question.

a The work variable was highly significant when its interaction with contraception was included in the analysis. See Table 15, Equation 1, and discussion in text.

b The three work variables were not significant in Pakistan even for the other two dependent variables (number of children ever born and desire for another child). The results for the Philippines were as follows:

	CEB		Desire another child	
Work variable	Urban	Rural	Urban	Rural
Whether working	<.01	NS (but significant when interaction with contraceptive use is considered. See Table 15, Equations 3 and 4.)	NS	<.001
Work place	<.01	NS	NS	<.001
Occupation	NS	<.05	NS	<.001

TABLE 9 Multiple classification analysis of births 5 years prior to survey, by selected independent variables, urban and rural: Pakistan

Independent variables	Urban (N)	Urban Unadjusted deviations	Urban Deviations adjusted for independents + covariates[a] Work/non-work (Eq. 1)	Urban Work place (Eq. 2)	Urban Occupation (Eq. 3)	Rural (N)	Rural Unadjusted deviations	Rural Deviations adjusted for independents + covariates[a] Work/non-work (Eq. 4)	Rural Work place (Eq. 5)	Rural Occupation (Eq. 6)
Husband's education										
None	329	0.07	0.06	0.06	0.05	953	-0.02	0.00	0.00	0.00
1–4 years	78	-0.12	-0.09	-0.09	-0.09	133	-0.04	-0.05	-0.05	-0.05
5+ years	462	-0.03	-0.03	-0.03	-0.02	342	0.06	0.01	0.01	0.01
Wife's education										
None	652	0.03	0.05	0.05	0.05	1,364	0.00	0.00	0.00	0.00
1–4 years	48	0.15	0.16	0.16	0.15	33	0.04	0.10	0.10	0.10
5+ years	169	-0.17	-0.24	-0.24	-0.24	31	-0.11	-0.26	-0.26	-0.26
Whether used contraception										
No	661	0.04	0.04	0.04	0.05	1,345	0.02	0.01	0.01	0.01
Yes	208	-0.13	-0.14	-0.14	-0.14	83	-0.30	-0.21	-0.21	0.20
Whether worked/working										
No	729	0.00	0.01			1,144	0.01	0.02		
Yes	149	-0.02	-0.06			284	-0.03	-0.07		

Work place										
Not working	720	0.00		0.01		1,144	0.01		0.02	
At home	105	-0.03		-0.06		119	0.03		-0.02	
Outside home	44	-0.00		-0.06		165	-0.07		-0.10	
Occupation										
Not working	720	0.00			0.01	1,144	0.01			0.02
Professional	17	-0.15			-0.08	7	0.66			0.68
Farmers	1	-1.68			-1.75	116	-0.04			-0.10
Tailors/weavers	84	0.02			-0.01	103	-0.01			-0.07
Others	47	-0.00			-0.10	58	-0.11			-0.09
Total	869					1,428				
Grand mean	1.68					1.62				
R^2			0.160	0.160	0.163			0.153	0.153	0.156

a The covariates included for this table were wife's age, wife's age squared, and duration of breastfeeding.

Philippines, the difference in recent fertility between working and nonworking women was much larger; working women had borne 0.23 fewer children in urban areas during the five years preceding the survey (Table 10). Women working at home had borne 0.32 fewer children than nonworking women, and professionals had borne 0.36 fewer children in urban areas. (The overall mean for urban areas was 1.47 children.) The differences for the rural areas were much smaller (and statistically insignificant), working and nonworking women having almost the same numbers of children.

When we examined these results further through an analysis of interaction effects for the Philippine data, we found a strong interaction between contraceptive use and work since marriage, as well as work place within the rural areas. Interaction terms to include these variables were constructed and entered into the regressions. The results after interaction terms were included are shown in Table 10 for selected equations. Unlike before, the work variable was highly significant when its interaction with contraceptive use was taken into account (Equation 1, Table 10). What is striking is that it was the nonworking user women who had notably lower fertility than the other groups. Thus, it seems that within the rural areas of the Philippines, work participation per se has not been an important factor in reducing recent fertility.

Place of work was found to be an important factor in fertility differentials. Equation 5 of Table 11 shows that rural women who worked outside the home had significantly lower fertility than those who worked at home. This finding is supported by the equation in which the interaction term between place of work and contraception was included (Table 10, Equation 2). There seem to be three types of pattern in rural areas. First, user women who had never worked had 0.23 fewer children than the average of 1.64. Second, those who worked at home typically had more children than women who worked outside the home. Third, those who worked outside the home—both those who had used contraception and those who had not—had fewer children than those who did not work outside. This last finding suggests two types of influence that work participation outside the home might be having on recent fertility, one representing deliberate fertility control, probably by relatively high SES women, and the other resulting from factors like health and fecundability, probably among relatively low SES women. These patterns are illustrated even more

TABLE 10 MCA results after including interaction terms in selected equations: Philippines

Interaction variables	Dependent variable = births in last 5 years, rural areas (N)	Unadjusted deviations	Deviations adjusted for independent and covariates	Dependent variable = CEB, rural areas (N)	Unadjusted deviations	Deviations adjusted for independent and covariates
Contraceptive use and whether worked since marriage			Eq. 1			Eq. 3
Used but never worked	253	-0.15	-0.23	64	0.51	0.66
Used and worked	172	-0.07	-0.03	73	0.04	0.49
Not used and never worked	1,208	0.08	0.06	498	-0.04	-0.01
Not used and worked	605	-0.08	-0.01	288	-0.05	-0.25
Total	2,238			923		
Grand mean	1.64			6.76		
R^2	.258			.304		
Contraceptive use and place of work			Eq. 2			Eq. 4
Used and never worked	254	-0.15	-0.23	64	0.51	0.67
Used and worked at home	60	-0.02	0.10	31	0.43	0.97
Used and worked outside	111	-0.09	-0.09	42	-0.25	0.14
Not used and never worked	1,208	0.08	0.06	497	-0.04	-0.01
Not used and worked at home	178	0.03	0.15	93	-0.39	-0.28
Not used and worked outside	427	-0.13	-0.07	196	0.11	-0.24
Total	2,238			923		
Grand mean	1.64			6.76		
R^2	.262			.306		

NOTE: All four equations were significant at $<.01$.

TABLE 11 Multiple classification analysis of births 5 years prior to survey, by selected independent variables, urban and rural: Philippines

Independent variables	Urban (N)	Urban Unadjusted deviations	Urban Deviations adjusted for independents + covariates[a] Work/non-work (Eq. 1)	Urban Work place (Eq. 2)	Urban Occupation (Eq. 3)	Rural (N)	Rural Unadjusted deviations	Rural Deviations adjusted for independents + covariates[a] Work/non-work (Eq. 4)	Rural Work place (Eq. 5)	Rural Occupation (Eq. 6)
Husband's education										
None	16	−0.31	−0.10	−0.10	−0.12	234	−0.32	−0.07	−0.07	−0.07
1–4 years	86	0.18	0.25	0.25	0.24	790	0.01	0.02	0.02	0.02
5+ years	606	−0.02	−0.03	−0.03	−0.03	1,215	0.05	−0.00	−0.00	−0.00
Wife's education										
None	22	−0.27	−0.23	0.23	−0.21	178	−0.34	−0.14	−0.15	−0.15
1–4 years	95	0.07	0.01	0.01	0.02	794	−0.00	0.04	0.05	−0.04
5+ years	590	−0.00	0.01	0.01	0.00	1,266	0.05	−0.01	−0.01	−0.00
Whether used contraception										
No	438	0.05	0.04	0.04		1,813	0.03	0.03	0.04	−0.03
Yes	269	−0.09	−0.06	−0.07		425	−0.12	−0.15	−0.15	−0.14
Whether worked/working										
No	468	0.14	0.09			1,461	0.04	0.00		
Yes	239	−0.28	−0.18			777	−0.08	−0.01		

Work place										
Not working	468	0.14		0.09		1,462	0.04		0.00	
At home	74	-0.25		-0.23		238	0.02		0.15	
Outside home	166	-0.30		-0.16		538	-0.12		-0.07	
Occupation										
Not working	468	0.14			0.09	1,462	0.04			0.00
Professional	66	-0.47			-0.27	39	-0.22			-0.22
Sales	94	-0.28			-0.14	131	-0.15			-0.02
Farmers	7	-0.67			-0.51	392	-0.06			-0.01
Tailors/weavers	24	0.00			-0.02	115	0.07			0.10
Others	48	-0.11			-0.18	98	-0.19			-0.01
Total	707					2,239				
Grand mean	1.47					1.64				
R^2			0.298	0.298	0.301			0.255	0.259	0.257

a The covariates included for this table were wife's age, wife's age squared, and duration of breastfeeding.

sharply in the analysis of number of children ever born that follows. The relatively high fertility of women working at home (when compared with nonworking women) still remains a puzzling result.

Finally, professional Filipino women in rural areas had noticeably fewer children than nonworking women but the differences were not statistically significant (Table 11, Equation 6).

These findings indicate that the recent fertility of working women in Pakistan was not significantly different from that of nonworking women even though the fertility of the former group was somewhat lower. The recent fertility of working Filipino women was lower than that of nonworking women as was the fertility of women in professional occupations, particularly in urban areas.

Children ever born (CEB)

We have used the number of children ever born as a proxy for the completed family size of women in our sample. The work variable used as an independent variable for the MCA of CEB was whether a woman had ever worked since marriage. (Currently working women were included in the "ever worked" category.) The optimal situation would have been to use a variable measuring the duration of work over the woman's married fecund lifetime. But this was not possible because the data on duration of work were not usable. Fairly large proportions of women in Pakistan as well as in the Philippines who had ever worked since marriage were, however, currently working (90 percent and 72 percent respectively). It is therefore reasonable to assume that most of the working women had been working throughout most of their married lives.

Working women in the urban and rural areas of Pakistan had borne a smaller number of children than nonworking women. Working women had borne 0.25 fewer children than the nonworking women in urban areas, and 0.46 fewer children in the rural areas; the overall means on CEB for urban and rural areas were 7.5 and 7.3, respectively (Table 12). These differences were not statistically significant, however. Women who worked outside the home in rural areas had a notably smaller CEB (0.60 fewer children) than nonworking women.[2]

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2 The interaction term for husband's education and wife's place of work was also entered into the regression on CEB. The interaction variable was not statistically significant in rural or urban areas. One interesting finding that emerged from this analysis, however, was that both low SES working women (women with

Women who worked outside the home in rural Pakistan were mainly farm workers, unskilled workers, and laborers, with the exception of a few professional women. Although differences were not statistically significant, the lower fertility of this group perhaps was due to certain poverty-related factors (such as poor nutrition and lower fecundability) rather than conscious fertility control. This hypothesis seems to be supported by the fertility differentials between women in different occupations. These findings should not be overemphasized, however, since none of the differences were statistically significant.

Among urban Filipino women, those who were working had borne a significantly smaller number of children than nonworking women—5.5 compared with 6.1. Similarly, urban Filipino women who were working at home had a significantly smaller number of CEB (5.1) than women working outside the home (5.6) and nonworking women (6.1). The pattern of relatively lower fertility among women working at home rather than outside is somewhat puzzling. Table 5 shows that 25 percent of all working urban Filipino women worked at home. Of these, over half (60 percent) were working as traders, seamstresses, or craft workers, all of which occupations rank as relatively low in status in Filipino society. To examine whether the unusually low fertility of these women might be related more to health and fecundability than to active fertility control, we included in the analysis an interaction term involving contraceptive use and work since marriage. Inclusion of the interaction term indicated that fertility of working women who had not used contraception was markedly lower than that of all other groups: 5.25 CEB compared with 5.79 for women who worked and used contraception. Furthermore, nonuser women who worked either at home or outside had significantly lower CEB than working user women:

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illiterate husbands) and high SES working women (whose husbands had five or more years of education) had a smaller number of CEB than nonworking women. This was true in both rural and urban areas. Working women whose husbands had less than five years of education actually had higher fertility than the nonworking women. The net addition of the interaction term to R^2 was 0.9 percent in urban and 0.5 percent in rural areas. Thus, there appears to be a curvilinear relationship between the interaction variable representing husband's education and wife's work place and fertility.

TABLE 12 Multiple classification analysis of CEB (children ever born), by selected independent variables, urban and rural: Pakistan

	Urban					Rural				
			Deviations adjusted for independents + covariates[a]					Deviations adjusted for independents + covariates[a]		
Independent variables	(N)	Unadjusted deviations	Work/non-work (Eq. 1)	Work place (Eq. 2)	Occupation (Eq. 3)	(N)	Unadjusted deviations	Work/non-work (Eq. 4)	Work place (Eq. 5)	Occupation (Eq. 6)
Husband's education										
None	106	0.46	0.14	0.14	0.13	362	-0.00	-0.04	-0.04	-0.05
1–4 years	37	0.07	0.28	0.29	0.27	49	-0.05	-0.12	-0.12	-0.13
5+ years	126	-0.41	-0.20	-0.20	0.19	83	0.04	0.26	0.26	0.29
Wife's education										
None	223	0.25	0.13	0.12	0.13	475	0.03	0.02	0.02	0.02
1–4 years	11	-0.87	-0.26	-0.25	-0.29	13	-0.51	-0.51	-0.55	-0.58
5+ years	35	-1.33	-0.72	-0.71	-0.73	6	-1.11	-0.24	-0.20	-0.20
Whether used contraception										
No	192	-0.08	-0.11	-0.11	-0.11	449	-0.03	-0.02	-0.03	-0.03
Yes	77	0.20	0.27	0.27	0.27	45	0.28	0.25	0.26	0.30
Whether worked/working										
No	223	0.06	0.04			412	0.07	0.08		
Yes	46	-0.31	-0.21			82	-0.36	-0.38		

Work place										
Not working	223	0.06		0.04		412	0.07		0.08	
At home	31	-0.02		-0.25		33	-0.15		-0.17	
Outside home	15	-0.90		-0.11		49	-0.50		-0.52	
Occupation										
Not working	223	0.06			0.04	412	0.07			0.08
Professional	6	-0.84			-0.11	3	1.06			0.71
Farmers	1	-1.50			-1.01	29	-0.90			-0.90
Tailors/weavers	26	0.15			-0.09	29	0.00			-0.05
Others	13	-0.89			-0.41	21	-0.32			-0.26
Total	269					494				
Grand mean	7.50					7.28				
R^2			0.245	0.245	0.246			0.214	0.215	0.219

a Covariates included were wife's age, duration of breastfeeding, duration of marriage, and duration of marriage squared.

Work and contraceptive status	$\bar{X}$ CEB	(N)
Used and never worked	6.40	67
Used and worked at home	5.65	6
Used and worked outside	5.82	40
Did not use and never worked	5.95	115
Did not use and worked at home	4.85	22
Did not use and worked outside	5.42	49
Overall mean	5.86	

These differences clearly show that the lower fertility of a large number of working women is not rooted in any planned behavior as evidenced by contraceptive use.

Differences by occupation in the fertility of urban Filipino women were not significant. It is noteworthy, however, that both professional and lower level working women such as sales workers had lower fertility than nonworking women (Table 13, Equation 3).

Within rural areas, working women had lower fertility than nonworking women as a group. Moreover, women who were working at home or outside had borne a smaller number of children than nonworking women (Table 13, Equations 4 and 5). Neither of these differences was large enough, however, to be statistically significant until the interaction between work (and place of work) and contraceptive use was taken into account. When this interaction term was included in the analysis both work participation and place of work appeared to be highly significant influences on fertility (Table 10, Equations 3 and 4). These equations illustrate rather clearly that the smaller number of CEB among rural working women relative to that of rural nonworking women did not result from deliberate fertility control, because the number was smaller only among women who were not using contraceptives. For example, rural women who worked at home and were not using contraception had 6.5 CEB compared with 7.7 for user women who were working at home. As we noted above, the majority of the Filipino women who worked at home were employed in relatively low SES jobs. It seems that among them, those with exceptionally high fertility made an attempt to control it by using contraception, whereas those with "naturally" lower fertility did not resort to fertility control. The lower fertility of working Filipino women than of nonworking women in rural areas thus seems to be a result of health and fecundability rather than of conscious fertility control.

Differences in the number of CEB by the occupational groupings of

rural women were significant. Professional women had a much smaller number of CEB than nonworking women, 5.3 compared with 6.7. The low fertility of rural professional women probably has important policy implications, particularly if this group represents pioneers in deliberate fertility control and such women are likely to play a major role in modifying normative structures.

To summarize, working Filipino women seem to have borne fewer children than their nonworking counterparts. It is not clear, however, whether their smaller family size was motivated by a desire to control fertility or resulted from relatively poor nutrition and health, which could have adversely affected fecundability. Both professional women and women in relatively less prestigious (and less well-paying) occupations had lower fertility than the nonworking women sampled. The evidence suggests that in rural areas working women had lower fertility because of factors other than deliberate fertility control. Within urban areas, working women of higher and lower SES had lower fertility than women who did not work.

Desire for another child

Desire for another child has been found to have a significant negative influence on behavior aimed at controlling fertility in both Pakistan and the Philippines (Nasra Shah and Palmore, 1979; Palmore and Concepción, 1981). A much larger proportion of Pakistani than of Filipino women included in our MCA analysis said they wanted another child (Tables 14 and 15). Our objective in using desire for another child as a dependent variable was to examine whether any of the three work variables exerted a significant influence on respondents' desire for another child.

The initial analysis showed that in Pakistan none of the work variables exerted a significant influence on desire for another child; the differences were generally small enough not to warrant comment (Table 14). A significant interaction was present, however, between husband's education and wife's place of work. An appropriate interaction term was therefore created and entered into the analysis. It turned out to be significant at $p < .01$, for urban areas. The adjusted proportions based on the MCA analysis indicated that, in general, more women working outside the home in urban areas had no desire for another child than did nonworking women. For example, among women working outside the home, 34 percent of those with illiterate husbands

TABLE 13 Multiple classification analysis of CEB (children ever born), by selected independent variables, urban and rural: Philippines

	Urban					Rural				
			Deviations adjusted for independents + covariates[a]					Deviations adjusted for independents + covariates[a]		
Independent variables	(N)	Unadjusted deviations	Work/non-work (Eq. 1)	Work place (Eq. 2)	Occupation (Eq. 3)	(N)	Unadjusted deviations	Work/non-work (Eq. 4)	Work place (Eq. 5)	Occupation (Eq. 6)
Husband's education										
None	6	0.21	0.83	0.98	0.83	134	0.20	-0.11	-0.11	-0.12
1–4 years	45	1.09	0.61	0.62	0.52	356	0.32	0.14	0.14	0.13
5+ years	250	-0.20	-0.13	-0.13	-0.11	434	-0.32	-0.08	-0.08	-0.07
Wife's education										
None	12	-0.25	-0.74	-0.78	-0.76	95	0.04	0.01	0.01	-0.03
1–4 years	40	1.21	0.45	0.44	0.50	388	0.29	0.13	0.13	0.11
5+ years	247	-0.19	-0.04	-0.03	-0.04	442	-0.26	-0.12	-0.12	0.09
Whether used contraception										
No	187	-0.05	-0.18	-0.17	-0.18	787	-0.05	-0.11	-0.10	-0.11
Yes	114	0.09	0.30	0.28	0.30	137	0.26	0.61	0.60	0.64
Whether worked/working										
No	182	0.30	0.26			562	0.02	0.09		
Yes	118	-0.46	-0.40			362	-0.03	-0.14		

Work place										
Not working	182	0.30		0.26		562	0.02		0.09	
At home	28	-0.71		-0.76		124	-0.18		-0.04	
Outside home	90	-0.38		-0.29		238	0.05		-0.19	
Occupation										
Not working	182	0.30			0.26	562	0.02			0.09
Professional	36	-1.30			-0.56	16	-1.50			-1.47
Sales	55	-0.30			-0.45	72	0.11			-0.11
Farmers	4	1.01			0.09	174	0.27			-0.02
Tailors/weavers	6	1.77			0.86	50	-0.39			0.12
Others	18	-0.18			-0.43	51	0.46			-0.43
Total	301					924				
Grand mean	5.86					6.76				
R^2			0.304	0.306	0.309			0.304	0.304	0.310

a Covariates included were wife's age, duration of breastfeeding, duration of marriage, and duration of marriage squared.

TABLE 14 Multiple classification analysis of desire for another child, by selected independent variables, urban and rural: Pakistan

Independent variables	Urban (N)	Urban Unadjusted deviations	Urban Deviations adjusted for independents + covariates[a] Work/non-work	Urban Work place	Urban Occupation	Rural (N)	Rural Unadjusted deviations	Rural Deviations adjusted for independents + covariates[a] Work/non-work	Rural Work place	Rural Occupation
Husband's education										
None	355	0.03	0.04	0.04	0.04	1,063	-0.02	0.01	0.01	0.01
1–4 years	79	-0.07	-0.02	-0.02	-0.02	156	0.04	0.04	0.04	0.04
5+ years	533	-0.01	-0.02	-0.02	-0.03	413	0.04	-0.04	-0.04	-0.04
Wife's education										
None	708	-0.00	0.01	0.01	0.01	1,551	-0.01	-0.00	-0.00	-0.00
1–4 years	58	0.03	0.01	0.01	0.01	42	0.07	0.04	0.04	0.04
5+ years	201	0.01	-0.04	-0.04	-0.04	39	0.14	-0.00	-0.00	-0.00
Whether used contraception										
No	755	0.07	0.02	0.02	0.03	1,546	0.02	0.01	0.01	0.01
Yes	212	-0.23	-0.09	-0.09	-0.09	86	-0.38	-0.18	-0.18	-0.18
Whether worked/working										
No	825	-0.01	-0.00			1,336	-0.01	-0.01		
Yes	142	0.03	0.01			296	0.04	0.03		

Work place										
Not working	825	0.00		0.00		1,336	-0.01		-0.01	
At home	98	0.02		-0.01		129	0.08		0.05	
Outside home	44	0.02		-0.02		167	0.01		0.02	
Occupation										
Not working	825	-0.00			0.00	1,336	-0.01			-0.01
Professional	18	0.07			0.03	9	0.00			0.11
Farmers	1	0.57			0.89	118	0.02			0.03
Tailors/weavers	72	-0.06			-0.06	112	0.06			0.05
Others	50	0.09			0.02	57	0.03			0.00
Total	967					1,632				
Grand mean	0.43					0.55				
R^2			0.448	0.448	0.452			0.431	0.431	0.432

a Covariates included were wife's age, wife's age squared, number of living children, number of living children squared, and wife's age at first marriage.

TABLE 15 Multiple classification analysis of desire for another child, by selected independent variables, urban and rural: Philippines

Independent variables	Urban (N)	Urban Unadjusted deviations	Urban Deviations adjusted for independents + covariates[a] Work/non-work	Urban Work place	Urban Occupation	Rural (N)	Rural Unadjusted deviations	Rural Deviations adjusted for independents + covariates[a] Work/non-work	Rural Work place	Rural Occupation
Husband's education										
None	25	-0.17	-0.09	-0.08	-0.06	233	-0.09	-0.02	-0.02	-0.02
1–4 years	118	-0.11	0.00	0.00	0.01	892	-0.03	0.00	-0.00	0.00
5+ years	962	0.02	0.00	0.00	0.00	1,516	0.03	0.00	0.00	0.00
Wife's education										
None	23	-0.22	-0.00	-0.00	-0.03	182	-0.05	0.03	0.03	0.03
1–4 years	132	-0.11	0.01	0.01	0.02	893	-0.06	-0.02	-0.02	-0.03
5+ years	950	0.02	-0.00	0.00	-0.00	1,567	0.04	0.01	0.01	0.01
Whether used contraception										
No	724	0.01	0.00	0.00	0.00	2,198	0.01	0.01	0.01	0.01
Yes	381	-0.02	-0.00	-0.00	-0.01	444	-0.05	-0.06	-0.06	-0.06
Whether worked/working										
No	778	-0.00	-0.01			1,987	-0.00	-0.02		
Yes	326	0.01	0.02			655	0.01	0.05		

Work place										
Not working	778	-0.00		-0.01		1,987	-0.00		-0.02	
At home	89	-0.07		0.00		205	-0.04		0.02	
Outside home	237	0.04		0.02		449	0.03		0.06	
Occupation										
Not working	778	-0.00			-0.01	1,987	-0.00			-0.02
Professional	127	0.17			0.07	64	0.30			0.21
Sales	123	-0.09			0.00	118	0.08			-0.01
Farmers	8	0.00			0.20	312	-0.01			0.05
Tailors/weavers	20	-0.08			-0.09	90	0.03			0.02
Others	48	-0.14			-0.08	70	-0.04			0.03
Total	1,105					2,642				
Grand mean	0.34					0.33				
R^2			0.376	0.376	0.381			0.353	0.353	0.356

a Covariates included were wife's age, wife's age squared, number of living children, number of living children squared, and wife's age at first marriage.

and only 17 percent of those whose husbands had less than five years of education wanted another child, compared with 46 percent of nonworking women with illiterate husbands. Among women who worked at home, on the other hand, larger proportions expressed a desire for another child than did nonworking women except for the subgroup of women whose husbands had higher education (5 or more years). Somewhat surprisingly, half (50 percent) of the women whose husbands had five or more years of education and who worked outside the home wanted another child, compared with 41 percent of the nonworking women with a similar level of husband's education. Thus, the demand for another child varied significantly by place of work and husband's education, but the pattern was not consistent for either variable.

In the Philippines, none of the three work variables had a significant effect on desire for another child among urban respondents (Table 15). Among rural Filipino respondents, however, significantly more working than nonworking women expressed desire for another child. This finding is surprising at first glance but seems to be consistent with some of the other characteristics of rural working women discussed above. We know from the analysis of the interaction between work participation and contraceptive use that working women in rural areas bore fewer children than nonworking women, not because of contraceptive use but because of other factors over which they probably had little control. We have also shown that a fairly large proportion of rural working women belonged to the relatively low SES groups who would be likely to idealize a relatively large family size. Given their actually lower fertility, it makes sense for more of them than of nonworking rural women to have desired another child.

A more puzzling finding is the significantly larger proportion of rural professional women than of nonworking women who expressed the desire for another child (54 percent compared with 31 percent). It should be recalled from Table 13 that rural professional women had significantly lower fertility than nonworking women—5.29 compared with 6.85. Possibly their desire for another child was rooted in their lower actual fertility. We also found the demand for another child to be more prevalent among working women with relatively higher education than among nonworking women when we entered an interaction term consisting of wife's education and work participation into the analysis. (The interaction between wife's education and

work participation was significant in rural areas and an appropriate interaction term was therefore included in the analysis.) Forty one percent of the rural working women with five or more years of education said they wanted another child, compared with 31 percent of the nonworking women with the same level of education. Thus, it does seem that demand for additional children was more widespread among professional women and working women with five or more years of education than among other respondents, the reasons for which need to be investigated further.

SUMMARY AND CONCLUSIONS

The objective of this study was to analyze the effect of the work participation of women on their recent fertility, number of children ever born, and desired fertility in Pakistan and the Philippines. Three measures of work participation were used: work participation versus nonparticipation, place of work (at home or outside), and type of occupation. We analyzed the data by means of multiple classification analysis and controlled appropriate background variables before examining the effect of work participation on fertility.

An analysis of the occupational structure of the female labor force in the two countries showed notable differences between them. Working women in Pakistan were highly concentrated in two or three traditional occupations whereas the occupational structure of the Filipino women was more diverse. Many more of the Pakistani women were self-employed and worked at home than the Filipino women. In the urban areas of Pakistan, the working women were typically less educated than the nonworking women; in urban areas of the Philippines, working women were more educated than their nonworking counterparts. Our comparison of working and nonworking women in the two countries led us to hypothesize that the Filipino occupational structure seemed much more likely to have a negative influence on fertility than the Pakistani structure.

Multivariate analysis supported our assumption for Pakistan and for many of the Philippine data. The differences between the fertility of working and nonworking women were not statistically significant in Pakistan. Working Filipino women had significantly lower recent fertility as well as number of children ever born. Professional women in urban areas had significantly lower recent fertility than the nonworking women. Similarly, professional women in rural areas had a

significantly lower number of children ever born than the nonworking women.

A closer examination of the negative relationship between work participation and fertility in the Philippine sample included study of the interaction between various independent variables. An analysis of the strong interaction between work participation (and workplace) and contraceptive use in the rural areas showed that recent fertility was significantly lower among user women who had never worked and among two groups of working women, user and nonuser women who worked outside the home, than among other women. Thus, recent fertility of working rural Filipino women seems to have been lower among those who consciously attempted to control their fertility and also those who had not taken any steps (contraceptive use) to prevent births; the latter group was numerically about four times larger than the former group.

With regard to completed fertility (children ever born, or CEB) among Filipino women aged 35 or more, the group with significantly lower fertility consisted of nonuser working women in both urban and rural areas. Furthermore, nonuser women, who worked either at home or outside, had significantly lower fertility than most other groups. Thus, there seems to be rather clear evidence in the Philippine data that the lower fertility of working women did not necessarily result from actions designed to curb fertility. Rather, lower fertility seemed most prevalent among relatively low-SES, less fecund women with the exception of a small subgroup of working women who had made a deliberate attempt at controlling their fertility.

Desire for another child was not significantly related to work participation in the urban Philippines. In rural areas a larger proportion of working than of nonworking women expressed the desire for another child, contrary to our expectation. Given the actual lower fertility of working women, which appeared in most cases to result from unplanned factors, it is perhaps not surprising that more of them wanted another child. A finding less easy to explain is that more of the professional and better educated rural women wanted another child than did other rural women.

The lack of significant results for Pakistan is consistent with earlier studies. Fewer Pakistani women (about 18 percent) perceived themselves as having entered the labor force than Filipino women (27 percent). About two-thirds of the urban Pakistani women worked at

home and 61 percent of the working women were self-employed. Almost two-thirds of the urban women were engaged in crafts occupations such as sewing and embroidering, whereas only 9 percent could be classified as professionals.

A majority of the Pakistani women who enter the labor force do so because of poverty and are in occupations that are, if anything, status-reducing rather than status-enhancing. Thus, analytic frameworks that posit incompatibility between the mother and worker roles or an alternative role identity derived from work that leads to lower fertility do not apply to a large majority of Pakistani women. A more plausible hypothesis is that lower fertility, when it has occurred, results from noncontraceptive factors (such as lower fecundity), as was the case for many Filipino women. Perhaps we will see such a pattern more clearly in the future as the differences between working and nonworking Pakistani women become sharper with overall economic development.

Future research on this subject might usefully focus on three areas. First, there is a need for much better conceptualization and measurement of the nature of work roles. This is true for all workers and for all kinds of work, but it is especially true for women and the typical women's occupations—where work settings, career sequences, educational and skill requirements, and other aspects of the work milieu involve unmeasured dimensions that may well be significant for childbearing decisions. Second, it would be valuable to shift analysis to the level of households in order to capture female labor supply as a volatile and therefore important aspect of family labor supply. The tradeoffs between a wife's use of time for market labor, economic activity at home, childbearing, and childrearing will become more explicit in a household context. Lastly, it will ultimately be necessary to develop methods and data for a genuinely dynamic analysis of work-fertility sequences within marital careers. Appropriate methods and data are just beginning to be developed.

REFERENCES

Afzal, Mohammad

1974 *The Population of Pakistan.* Islamabad: Pakistan Institute of Development Economics.

Allman, James, ed.

1978 *Women's Status and Fertility in the Muslim World.* New York: Praeger.

Bean, Lee L.

1968 Utilization of human resources: the case of women in Pakistan. *International Labour Review* 97(4):391–410.

Collver, Andrew

1968 Women's work participation and fertility in metropolitan areas. *Demography* 1:55–60.

Concepción, Mercedes B., Wilhelm Flieger, Elvira M. Pasual, and William F. Stinner

1975 The childbearing patterns of young Filipino women. In Wilhelm Flieger and Peter C. Smith, eds., *A Demographic Path to Modernity: Patterns of Early-Transition in the Philippines.* Quezon City: University of the Philippines Press.

Concepción, Mercedes B., and Peter C. Smith

1977 *The Demographic Situation in the Philippines.* Papers of the East-West Population Institute, No. 44. Honolulu: East-West Center.

Encarnación, Jose, Jr.

1975 Family income, educational level, labor force participation and fertility. *Philippine Economic Journal* 12(1 and 2):536–49.

1978 Fertility and labour force participation: Philippines 1968. In Guy Standing and Glen Sheehan, eds., *Labour Force Participation in Low-Income Countries.* Geneva: International Labour Office.

Farooq, Ghazi M.

1975 *Dimension and Structure of Labor Force in Relation to Economic Development.* Islamabad: Pakistan Institute of Development Economics.

Fong, Monica S.

1976 Female labor force participation and fertility: some methodological and theoretical considerations. *Social Biology* 23(1):45–54.

Goldstein, Sidney

1972 The influence of labor force participation and education on fertility in Thailand. *Population Studies* 26:419–36.

Harman, Alvin J.

1970 *Fertility and Economic Behavior of Families in the Philippines.* Santa Monica: Rand Corporation.

Hass, Paula

1972 Maternal role incompatibility and fertility in urban Latin America. *Journal of Social Issues* 28:111–27.

Heer, David M., and Elsa S. Turner

1965 Areal differences in Latin American fertility. *Population Studies* 18:279–92.

Jaffe, A.J., and K. Azumi

1960 The birth rate and cottage industries in under-developed countries. *Economic Development and Cultural Change* 9(1).

Khan, Seemin Anwar, and Faiz Bilquees

1976 The environment, attitudes and activities of rural women: a case study of a village in Punjab. *The Pakistan Development Review* 15(3).

Kintanar, Agustin, Jr., Romeo M. Bautista, Mercedes B. Concepción, José Encarnación, Jr., Mahar Mangahas, Vicente B. Paqueo, and Peter C. Smith

1974 *Studies in Philippine Economic-Demographic Relationships.* Quezon City: Institute of Economic Development and Research, School of Economics, University of the Philippines.

Kupinsky, Stanley, ed.

1977 *The Fertility of Working Women: A Synthesis of International Research.* New York: Praeger.

Maurer, K., R. Ratajezak, and T. Paul Schultz

1973 *Marriage, Fertility and Labor Force Participation of Thai Women: An Econometric Study.* Santa Monica: Rand Corporation.

Palmore, James A., and Mercedes B. Concepción

1981 Desired family size and contraceptive use: an 11-country comparison. *International Family Planning Perspectives* 7(1):37–40.

Population Planning Council

1976 *WFS: Pakistan Fertility Survey: First Report.* Islamabad: Population Planning Council of Pakistan.

Potter, Robert, Mary L. New, John B. Wyon, and John E. Gordon

1965 Applications of field studies to research on physiology of human reproduction: lactation and its effects upon birth intervals in eleven Punjab villages, India. In Mindel C. Sheps and Jeanne Claire Ridley, eds., *Public Health and Population Change,* pp. 377–99. Pittsburgh: University of Pittsburgh Press.

Pullum, Thomas W.

1975 Differentials in marital fertility. In Wilhelm Flieger and Peter C. Smith, eds., *A Demographic Path to Modernity: Patterns of Early-Transition in the Philippines.* Quezon City: University of the Philippines Press.

Rodgers, Gerry B., Mike J.D. Hopkins, and Rene Wery

1978 *Population, Employment, and Inequality: The BACHNE Model Applied to the Philippines.* New York: Praeger.

Rosenzweig, Mark R.

1976 Female work experience, employment status, and birth expectations: sequential decision-making in the Philippines. *Demography* 13(3):339–56.

Saeed, Kishwar

1966 *Rural Women's Participation in Farm Operations.* Lyallpur: West Pakistan Agricultural University Press.

Safilios-Rothschild, Constantina

1977 The relationship between women's work and fertility: some methodological and theoretical issues. In Stanley Kupinsky, ed., *The Fertility of Working Women: A Synthesis of International Research.* New York: Praeger.

Shah, Iqbal H.

1980 Breastfeeding and fertility in Pakistan. Paper presented at the World Fertility Survey Conference, London, July 7–11.

Shah, Nasra M.

1975 Female labour force participation and fertility desire in Pakistan: an empirical investigation. *The Pakistan Development Review* 14(2):185–206.

1977 Fertility of working versus non-working women in Pakistan, 1978. Paper presented at the Seminar on Women and Development held at Dacca, Bangladesh, March.

Shah, Nasra M., and James A. Palmore

1979 Desired family size and contraceptive use in Pakistan. *International Family Planning Perspectives* 5(4):143–50.

Shah, Nasra M., and Makhdoom A. Shah

1980 Trends and structure of female labour force participation in rural and urban Pakistan. In Alfred de Souza, ed., *Women in Contemporary India and South Asia.* New Delhi: Indian Social Institute.

Shah, Nasra M., Makhdoom A. Shah, and Tauseef Ahmed

1977 Labour force, employment and unemployment statistics in Pakistan. In Pakistan Manpower Institute, *Manpower and Employment Statistics in Pakistan.* Islamabad.

Stycos, J. Mayone

1965 Female employment and fertility in Lima, Peru. *Milbank Memorial Fund Quarterly* 43:42–54.

Stycos, J. Mayone, and R.H. Weller

1967 Female working roles and fertility. *Demography* 4(1):210–19.

Syed, Sabiha Hassan

1978 Female status and fertility in Pakistan. *The Pakistan Development Review* 17:408–30.

Vallin, Jacques

1978 Fertility in Algeria: trends and differentials. In James Allman, ed., *Women's Status and Fertility in the Muslim World,* pp. 131–51. New York: Praeger.

Weller, R.H.

1968 The employment of wives, role incompatibility and fertility: a study among lower and middle class residents of San Juan, Puerto Rico. *Milbank Memorial Fund Quarterly* 46:507–26.

Williams, Louise

1979 WFS reports confirm changes in Asian breastfeeding patterns. *Intercom* 7(4):7–9.

Zarate, A.D.

1967 Differential fertility in Monterrey, Mexico: prelude to transition. *Milbank Memorial Fund Quarterly* 45:93–108.

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